

**From:** Sean E. Millichamp  
**To:** Microsoft ATR  
**Date:** 1/25/02 9:04am  
**Subject:** Microsoft Settlement

I am a concerned citizen of the United States of America. I have worked in the technology field for over 10 years and have a B.S.E. in Computer Engineering from the University of Michigan. I work daily with both Microsoft environments and non-Microsoft environments and would like to add my comments regarding the settlement to the Tunney Act comment process.

I have observed Microsoft engage in (at best) questionable business practices over the years and it came as no surprise to me that the Court of Appeals affirmed that Microsoft has a monopoly on Intel-compatible PC operating systems, and that the company's market position is protected by a substantial barrier to entry.

From my extensive experience in the technology field it is clear that there is one primary underlying issue that needs to be addressed in order to provide the opportunity for other companies and software to be able to compete with Microsoft's offerings on a level playing field. This issue is interoperability between different software packages and the operating system itself. In the language of technology it is addressed in three ways:

#### 1) Application Programming Interfaces (APIs)

An API is the method by which one software module (or program) calls functions (or services) in another module (including functions provided by the operating system itself). If Microsoft was required to make accurate documentation for the full API in all versions of the Windows operating systems it would be possible to create replacements that would, if Microsoft's documentation were full and accurate to the way the API functions in Windows, allow any program written to run on Windows to run on any program that duplicates the published Windows API.

There is one such project currently underway for Linux (<http://www.winehq.com>) but their progress has been hampered by incomplete, inaccurate, and often missing documentation about how the Windows API functions. Also, for this to be a truly effective and universal remedy the documentation must be accessible to all of those who wish to reference it without agreeing to any sort of a Non-Disclosure Agreement. Such restrictions would make it impossible for Open Source software projects to benefit from the availability of such materials.

#### 2) Document Formats

Microsoft not only has control via the Windows Operating System, but also

via its dominance in office productivity applications with its Microsoft Office product.

Businesses and individuals have been forced into a situation where they often have no choice but to use Office because they need to exchange documents that have been created by others in a proprietary format only supported in Office. Microsoft has deliberately failed to document the format that the information is structured in within these document files. This has prevented other office suite competitors from creating mechanisms by which they could reliably read and write these files to promote document interchange.

Furthermore, this undocumented file format effectively locks up billions of dollars worth of documents of the businesses and people of the United States of America wholly under Microsoft's control. Real time and money has been invested in the creation of those documents and without the file format it is impossible to have access to your own data without using the proper Microsoft tool. This gives one company an uncomfortably high degree of control over the rest of the computer users in the country. If you decide you don't want to use Microsoft's products anymore you can not effectively extract your own data from their proprietary formatted files.

### 3) Network Protocols

A Network Protocol defines how one computer program can interact with another computer program over a network. TCP/IP (the protocol that the Internet uses) is an open and published standard where all of the communication mechanisms and features can be read in reference documents for any and all to implement. This is the primary reason that Internet accessibility is a feature of virtually all computer platforms regardless of their vendor, operating system, or end-user functionality.

Microsoft has a number of protocols that they use on the network. One such protocol is CIFS (formerly SMB) which allows Microsoft computers to share files and printers. Microsoft has documented some (but not all) of the protocol it uses to do this communication and much of what is documented does not match what their implementation in Windows actually does.

The omission of even a small part of the protocol can effectively make it impossible to implement a functioning version of any of it. This has been demonstrated most recently and effectively by Microsoft's design and implementation of their Active Directory services in Windows 2000. In order to be able to claim that they are using open and published standards Microsoft built their Active Directory services (which provides, among other things, workstation logins to a server) around two well established protocols: the Lightweight Directory Access Protocol (LDAP) and the Kerberos protocol. Microsoft followed all of the standards except made one proprietary modification to Kerberos in the "Privilege Attribute

Certificate" (PAC) which they have only documented under a non-disclosure agreement in such a way as to prevent any competition from legally using the documentation to create a compatible non-Microsoft replacement. Without the knowledge of how this field is used, it is impossible to re-implement the functionality that a non-Microsoft server can server Microsoft Windows clients or so that non-Microsoft clients can access all the functionality of a Microsoft Windows server. One such project that has been hurt by this "embracing and extending" of open standards and then Microsoft's subsequent refusal to document their changes has been the Samba team (<http://www.samba.org>) which has created software that attempts to re-implements the functionality of Microsoft file and print servers for Unix-based operating systems. This would give users a choice of which servers they can use to provide file and print services to Microsoft Windows workstations.

Summary:

The core problem is that Microsoft, in their position as a monopoly, have repeatedly failed to freely provide sufficient and comprehensive documentation that allow programs to communicate with the operating system, programs to communicate with each-other, and people to exchange and access their own data freely. The remedy would be to require Microsoft to freely provide complete and accurate documentation on all of their APIs, network protocols, and file formats used in their applications. This would, if executed properly, allow others to create software that could interact with and/or replace equivalent Microsoft offerings thus giving the consumer the ability to chose the best software for the job and not just the only software that will let them fully and effectively interact with other computer users. It is my opinion that any settlement and remedy that does not include these provisions will be wholly ineffective at providing a real solution.

Thank you for your time and consideration.

Sean E. Millichamp  
1920 Spruce Lane  
Ypsilanti, MI 48198-9492

--

Sean E. Millichamp, Director of Technical Services  
Ingemantics - A Division of Compu-Aid, Inc.